

IFAR Virtual Exchange (IVX) with Jay Dryer Jan 8, 2020

Submitted Questions and Answers from Conference I/O
Responses from Jay Dryer

1) Q: How do you foresee the learning of Aviation Space Aeronautics with the new models of know-how (Coursera, Edx) and making this possible across the world?

A: The impact from these new online opportunities is not easy to predict, but I can only imagine that greater sharing of knowledge will have a positive impact. At the end of the day individual learning still needs to come together in a team environment to more effectively solve problems. I see the examples you listed as a good way to help develop skills, but we still need a mechanism or platform to bring people together too.

2) Can you talk a bit about NASA SBIRs aimed at supporting aeronautics research?

A: NASA Aeronautics is well represented in the Agency's SBIR program. There are representatives of each program that helps coordinate topics that are relevant to the Aeronautics portfolio. There have been cases of Programs supporting Phase III Proposals as well.

3) How does NASA QUICKLY partner hire a wide array of non-aerospace disciplines to push forward these emerging markets

A: This is a good question and really is something we are continuing to work on. We have had some good success in public outreach events. For example, when starting planning for the Urban Air Mobility Grand Challenge we hosted a forum that brought many non-technical organizations. Another good example is in executing some of our experiments. I talked about the UAS Traffic Management system being tested in Reno and Corpus Christie. In both cities we had excellent participation from local government and first responders.

4) Is there a future for blended wing body other unconventional designs if skepticism from the public hurts their marketability

A: Personally, I believe that there is a future for unconventional designs. In general, the public is becoming more aware and tolerant of rapid technology evolution and I feel that this will carry forward to aviation. Also, there is a potential that such an aircraft could enter service in a military or cargo capacity, which would also facilitate future civil use.

5) Based on the minimal benefits of STARC-ABL, why is this still a poster child for NASA Aeronautics

A: Work is still ongoing to quantify the benefits of the STARC-ABL configuration. It is also important to note that the configuration shown is a combination of multiple technologies (e.g. truss braced wing) that combine to show significant benefits.

6) What about thin-haul regional air mobility. There seems to be a significant amount of latent demand for this market.

A: I did not mention the short haul market in my talk, but it is certainly something we are paying attention to. We believe that there is a good intersection between technologies associated with UAM and larger aircraft (e.g. more electric propulsion). Perhaps the limiting factor at this point is a strong pull from industry to develop and field such an aircraft (compared to what we see with larger aircraft or UAM).

7) For UAM, what lessons can we learn from the growing autonomous ground mobility systems and existing logistic systems?

A: We are paying attention to developments in ground based systems to examine how they approach challenges such as testing, certification and standards development to see what might be applicable to aviation.

8) ARMD's priorities seem to emphasize people-carrying urban vehicles rather than small UAS. Do you think the community is ok with that de-emphasis on small UAS?

A: From a vehicle perspective the community is moving so fast and does appear to rely on NASA research. Significant progress has been made in UTM, but NASA is not an implementing organization. UAS integration will continue to be a part of the overall Air Traffic Management Research effort.

9) What is the key point to success collaboration with industry, institutes and university?

A: It is hard to name one point, but if I had to pick I would say being as open as possible about our goals, objectives and strategies. That has helped us more effectively identify common ground where we can work together.

10) What is NASA's role in recertifying the Boeing 737 Max?

A: NASA has provided subject matter experts to support the FAA, but is not directly involved in certification activities as an Agency.

11) What's next for you in your career?

A: I will remain in government, but am taking a position with the Department of Defense.

12) As an organization, how can we listen to our rising aerospace leaders instead of lobbyists to guide our portfolio?

A: My first reaction is that we are not talking to lobbyists either. However, there is room for more interaction with our rising leaders. While it is still in the beginning phases, one thing that we are looking at within NASA Aeronautics is improving our connection to early career employees and ensuring that this is an opportunity for 2-way communication.

13) NASA moves slowly. How can NASA Aeronautics become more agile in shifting their programs, projects, and overall hierarchy?

A: This is a good question and something we continue to explore as well. One thing that we are experimenting with are means to better work across programs and projects instead of reorganizing every time we want to do something new. Personally, I believe there are opportunities to take more risk in how we do business too.

14) Why is NASA justifying the hype train of UAM when there are still many miracles that need to occur to enable this market?

A: It is hard to answer the question since it is vague on which "miracles" are needed. There are so many potential paths that a UAM market could take and there is a significant pull from the community. It is important to remember that UAM does not have to be limited to an urban air taxi type of market to be successful or have impact.

15) Within the past few years, NASA aeronautics changed how it works with universities through the ULI program. Can you talk about how this program is going and how is the research being integrated into NASA technologies and into production?

A: One point to note is that NASA continues to use its traditional NRA approach as needed to support our research. From our view point, even though it is still early in the process, ULI seems to be working quite well. The goal was not just to do research that could be pulled into NASA, but has an impact on the community. While NASA is interested in many of the ideas being developed, we are also already seeing signs of industry adopting technologies developed under ULI as well as direct interest in the students themselves from a job standpoint after graduation.

16) What advice do you have about the non-technical parts of my career (promotions, raises, etc.) I'm still relatively new in my career, and I know I need to focus on my technical skills, but I'm also thinking about my kids' college and my retirement.

A: My advice is that you need to strive to find balance in your life. If you let it, work can become too consuming. It is important to develop a strong work ethic and gain a reputation for being reliable. In turn this helps you gain promotions and more responsibility. At the same time, make sure that you take time to enjoy the things outside the office such as your family, your friends and interests. That is a critical part of the work-life balance that actually helps make you more productive and successful too.

17) Why is NASA focused on large transport aircraft and vertical lift Why no focused research on regional air mobility

A: This is touched on in another question, but one key point is that we feel that many technologies and knowledge that come from working large transportation or UAM will also have an impact on the regional aircraft applications too. Autonomy and more electric propulsion are good examples. One factor though is that we see less pull from a viable industry partner in the US to develop a new vehicle to support this market at the moment.

18) What do you see as NASA's role in Hypersonics R&D as we see increased interest from DoD and industry?

A: While the investment levels have varied, NASA has been involved in hypersonic research for decades. We partner with the DoD to help support their mission, but at the same time to leverage data to help develop our tools. The NASA focus (as it has been for more than a decade) is to try to be out in front of the DoD in terms of technology development and also to have our eye on civil applications. This is the reason that we are focused in areas such as re-usability.

19) With so much changing in aviation recently, do you think it is time for a reorganization of programs and projects at NASA?

A: My personal opinion is that conducting too many reorganizations can actually slow things down rather than make work more efficient. Instead, I think there needs to be more attention placed on becoming flexible in how we operate so that we can change and adapt more readily.

20) What is the potential impact to aviation of using SpaceX's Starship to provide travel to anywhere on Earth in under an hour

A: I think the impact in terms of passengers will be quite limited, but if it happens it will have a significant effect on catching people's attention about the potential that new transportation can bring. In short, it would be exciting and inspirational.